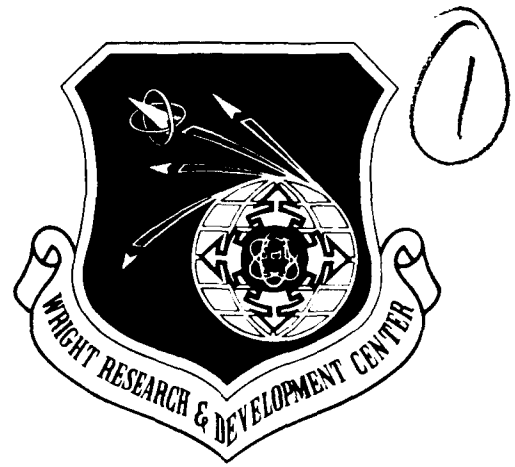


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Volume V
Part 34

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INTEGRATED INFORMATION SUPPORT SYSTEM (IISS)
Volume V - Common Data Model Subsystem
Part 34 - Reports and Application User's Manual

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Fairborn, OH 45324-6209

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WRIGHT RESEARCH AND DEVELOPMENT CENTER
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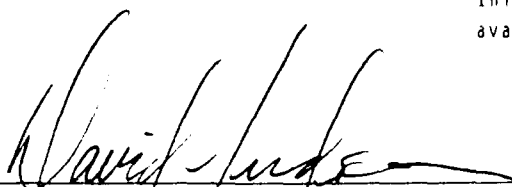
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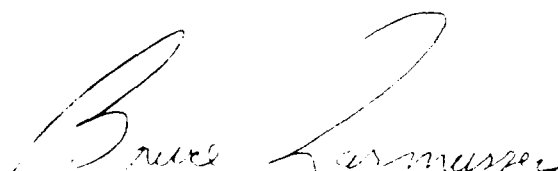
This technical report has been reviewed and is approved for publication.

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DAVID L. JUDSON, Project Manager
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25 July 91
DATE

FOR THE COMMANDER:


BRUCE A. RASMUSSEN, Chief
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25 July 91
DATE

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19. ABSTRACT (Continue on reverse if necessary and identify block number) This manual explains and shows how the CDM Reports and Application utilities are used to examine the contents of the CDM. BLOCK 11: INTEGRATED INFORMATION SUPPORT SYSTEM Vol V - Common Data Model Subsystem Part 34 - Reports and Application User's Manual				
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FOREWORD

This technical report covers work performed under Air Force Contract F33600-87-C-0464, DAPro Project. This contract is sponsored by the Manufacturing Technology Directorate, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio. It was administered under the technical direction of Mr. Bruce A. Rasmussen, Branch Chief, Integration Technology Division, Manufacturing Technology Directorate, through Mr. David L. Judson, Project Manager. The Prime Contractor was Integration Technology Services, Software Programs Division, of the Control Data Corporation, Dayton, Ohio, under the direction of Mr. W. A. Osborne. The DAPro Project Manager for Control Data Corporation was Mr. Jimmy P. Maxwell.

The DAPro project was created to continue the development, test, and demonstration of the Integrated Information Support System (IISS). The IISS technology work comprises enhancements to IISS software and the establishment and operation of IISS test bed hardware and communications for developers and users.

The following list names the Control Data Corporation subcontractors and their contributing activities:

<u>SUBCONTRACTOR</u>	<u>ROLE</u>
Control Data Corporation	Responsible for the overall Common Data Model design development and implementation, IISS integration and test, and technology transfer of IISS.
D. Appleton Company	Responsible for providing software information services for the Common Data Model and IDEF1X integration methodology.
ONTEK	Responsible for defining and testing a representative integrated system base in Artificial Intelligence techniques to establish fitness for use.
Simpact Corporation	Responsible for Communication development.
Structural Dynamics Research Corporation	Responsible for User Interfaces, Virtual Terminal Interface, and Network Transaction Manager design, development, implementation, and support.
Arizona State University	Responsible for test bed operations and support.

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SECTION 1

INTRODUCTION

Reports are tools useful in examining the contents of the Common Data Model database (CDM). These tools and the Neutral Data Definition Language (NDDL) 'COPY' commands give a comprehensive picture of the CDM contents to the CDM Administrator (CDMA) and to any other users of NDDL.

Reports provide hard copy lists of objects within the CDM in table format. The Reports are interactive and enable the user to list the CDM contents for selective or all objects.

Intended Audience

This document is intended to be used by CDMA's, and those who are responsible for maintaining the CDM and ensuring it remains in a consistent state.

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

SECTION 2

USING REPORTS

2.1 Available Reports

1. **Conceptual Schema Report** - This report displays for ALL entities or a specific entity in a given model the entity name, its attribute names and corresponding data type names, data types, sizes, and number of decimal places as contained in the CDM.
2. **External Schema Report** - This report displays for one specific view ALL views or all views for a specific owner, the view name, view owner and corresponding data item names, data type names, data types, sizes, and number of decimal places as contained in the CDM.
3. **Internal Schema Report** - This report displays for a specific database and either a specific record or ALL records the record name and corresponding data field names, data type names, data types, sizes, and number of decimal places as contained in the CDM.
4. **Domain Report** - This report displays for a specific domain name or ALL domains the domain name and corresponding data type names, data types, sizes, number of decimal places, whether it is a standard or user-defined data type, and the verification modules as contained in the CDM.
5. **Conceptual Schema Key Report** - This report displays for a specific model and a specific entity or ALL entities the entity name, the key class name, and the attribute name as contained in the CDM.
6. **CS-IS Report** - This report consists of four sub-reports:
 - a. **Mappings for a Conceptual Schema Entity** - This sub-report displays for the attribute to data field mappings for one specific entity or ALL entities the entity name and the corresponding attribute names, database names, record names, data field names, and preference number as contained in the CDM.
 - b. **Mappings for an Internal Schema Record** - This sub-report displays for one specific record or ALL records in a specific database the record name and the corresponding data field names, attribute names, entity names, and preference number as contained in the CDM.
 - c. **Mappings for a Conceptual Schema Relation Class** - This sub-report displays for an independent entity/dependent entity combination database name, owner record name, set name, and member record name as contained in the CDM.

- d. Mapping Rules for an Entity - This sub-report displays for one specific entity or ALL entities the entity name and its associated distributed update, and retrieval rules as contained in the CDM.
7. CS-ES Report - This report consists of two sub-reports:
 - a. External Schema Mappings for a Conceptual Schema Entity - This sub report displays for one specific entity or ALL entities the entity name, its corresponding attribute names, view names, and data item names as contained in the CDM.
 - b. Conceptual Schema Mappings for an External Schema View - This sub report displays for one specific view or ALL views the view name, its corresponding data item names, entity names, and attribute names as contained in the CDM.
 8. Logical Unit of Work Report - This report will display for one specific logical unit of work or ALL logical units of work the logical unit of work name, the mod id, and the database name as contained in the CDM.
 9. Keyword Usage Report - This report consists of two sub-reports:
 - a. Keyword Usage - This sub-report displays for a specific keyword the model name and corresponding data type for that keyword as contained in the CDM. The keyword search will include all keywords with the input string imbedded. That means that an input of "SMITH" will return keywords "SMITHE" and "H. SMITH."
 - b. Model Keyword - This sub-report displays for all keywords in all models, all keywords in a given model, all entities in a given model, or all relations in a given model the model name, corresponding data type and keyword as contained in the CDM.

2.2 Input

1. Conceptual Schema Report - This report prompts for a Model Name and a specific Entity Name or "ALL" entity names.
2. External Schema Report - This report prompts for a View Name, "ALL" view names, or a specific view owner.
3. Internal Schema Report - This report prompts for a Database Name and a specific Record Name or "ALL" record names.
4. Domain Report - This report prompts for a specific Domain Name or "ALL" domain names.
5. Conceptual Schema Key Report - This report prompts for a Model Name and a specific Entity Name or "ALL" entity names.

6. CS-IS Report - This report prompts for a choice of four sub-reports.
 - a. Mappings for a Conceptual Schema Entity - This sub-report prompt for a specific Entity Name or "ALL" entity names.
 - b. Mappings for an Internal Schema Record - This sub-report prompts for a specific record name or "ALL" record names and a Database Name.
 - c. Mappings for a Conceptual Schema Relation Class - This sub-report prompts for an Independent Entity Name and a Dependent Entity Name.
 - d. Mapping Rules for an Entity - This sub-report prompts for a specific Entity Name or "ALL" entity names.
7. CS-ES Report - This report prompts for a choice of two sub-reports:
 - a. External Schema Mappings for a Conceptual Schema Entity - This sub-report prompts for a specific Entity Name or "ALL" entity names.
 - b. Conceptual Schema Mappings for an External Schema View - This sub-report prompts for a specific View Name or "ALL" view names.
8. Logical Unit of Work Report - This report prompts for a specific Logical Unit of Work Name or "ALL" logical units of work.
9. This report prompts for a choice of two sub-reports:
 - a. Keyword Usage - This sub-report prompts for a specific keyword name.
 - b. Model Keyword - This sub-report prompts for a selection of all keywords in all models, all keywords in a given model, all entity keywords in a given model, all attribute keywords for a given model, or all relation keywords for a given model.

2.3 Output

The output extends past 80 columns on the first seven reports and the Keyword Usage Report. If you select to view the report on the screen, the output is automatically changed to 132 column format.

An example of each report follows.

1. Conceptual Schema Report:

Input: Model Name - INTEGRATED_MODEL
Entity Name - ATTRIBUTE_CLASS

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Conceptual Schema Report

ENTITY NAME	ATTRIBUTE NAME	DATA TYPE NAME	DATA TYPE	SIZE	# DEC
ATTRIBUTE_CLASS	AC_NO	NUMERIC_ID	N	6	0
	DOMAIN_NO	NUMERIC_ID	N	6	0
	MODEL_NO	NUMERIC_ID	N	6	0

2. External Schema Report -
Input: View Name - ATTRIBUTE_CLASS

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External Schema Report

VIEW NAME	VIEW OWNER	DATA ITEM NAME	DATA TYPE NAME	DATA TYPE	SIZE	# DEC
ATTRIBUTE_CLASS	ODM	AC_NO	NUMERIC_ID	N	6	0
	ODM	DOMAIN_NO	NUMERIC_ID	N	6	0
	ODM	MODEL_NO	NUMERIC_ID	N	6	0

2. External Schema Report -
Input: View Owner - PROD

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External Schema Report

page 1

VIEW NAME	VIEW OWNER	DATA ITEM NAME	DATA TYPE NAME	DATA TYPE	SIZE	# DEC
USER_VIEW	PROD	VIEW_ID	CHARACTER_NAME	C	30	0
	PROD	VIEW_NO	NUMERIC_ID	N	6	0
	PROD	DISTINCT_IND	DISTINCT_IND	C	1	0
	PROD	VIEW_OWNER	CHARACTER_NAME	C	30	0
USER_VIEW_SMALL	PROD	VIEW_ID	CHARACTER_NAME	C	30	0

3. Internal Schema Report -
Input: Database Name - CUSID
Record Name - ALL

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Internal Schema Report

RECORD NAME	DATA FIELD NAME	DATA TYPE NAME	DATA TYPE	SIZE	# DEC
CO LINE ITEM	CO LINE_NO	NUMBER	C	15	0
	CO DUE DATE	DATE1	C	6	0
	CO LI STATUS_CODE	CODE	C	2	0
	CO QUANTITY_REQUIRED	QUANTITY	N	8	2
	PART_NO	NUMBER	C	15	0
CUSTOMER	CUSTOMER_NO	ORDER_NO	C	10	0
	CUSTOMER_ADDR	ADDRESS	C	60	0
	CUSTOMER_NAME	NAME	C	20	0
CUSTOMER_ORDER	CUSTOMER_ORDER_NO	ORDER_NO	C	10	0
	CO STATUS_CODE	CODE	C	2	0
	CO PURCHASE_ORDER_DATE	DATE1	C	6	0

4. Domain Report -
Input: Domain Name - DOLLARS

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Domain/Data Type Report

DOMAIN NAME	DATA TYPE NAME	DATA TYPE	SIZE	# DEC	STD/ VERIFICATION USER MODULE
DOLLARS	DOLLARS	N	8	2	STD
	LABOR_RATE	P	5	2	USER
	BURDEN_RATE	P	6	2	USER
	DOLLARS_P	P	8	2	USER

5. Conceptual Schema Key Report -

Input: Model Name - INTEGRATED_MODEL
Entity Name - ATTRIBUTE_CLASS

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Conceptual Schema Key Report

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ENTITY NAME	KEY CLASS NAME	ATTRIBUTE NAME
ATTRIBUTE_CLASS	ATTRIBUTE_CLASS_KEY	AC_NO

6. CS-IS Report - Mappings for a Conceptual Schema Entity
Input: Entity Name - ATTRIBUTE_CLASS

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Attribute to Data field CS-IS Mappings

ENTITY NAME	ATTRIBUTE NAME	DATABASE NAME	RECORD NAME	DATA FIELD NAME	PREF
ATTRIBUTE_CLASS	AC_NO	CEM	ATTRIBUTE_CLASS	AC_NO	1
	DOMAIN_NO	CEM	ATTRIBUTE_CLASS	DOMAIN_NO	1
	MODEL_NO	CEM	ATTRIBUTE_CLASS	MODEL_NO	1

6. CS-IS Report - Mappings for an Internal Schema Record
Input: Record Name - ATTRIBUTE_CLASS
Database Name - CDM

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Mappings for an Internal Schema Record

RECORD NAME	DATA FIELD NAME	ATTRIBUTE NAME	ENTITY NAME	PREF
ATTRIBUTE_CLASS	AC_NO	AC_NO	ATTRIBUTE_CLASS	1
	DOM_IN_NO	DOMAIN_NO	ATTRIBUTE_CLASS	1
	MODEL_NO	MODEL_NO	ATTRIBUTE_CLASS	1

6. CS-IS Report - Mappings for a Conceptual Schema Relation Class
Input: Independent Entity Name - CUSTOMER
Dependent Entity Name - CUSTOMER_ORDER

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Relation Class to Set Mappings

DATABASE NAME	OWNER RECORD NAME	SET NAME	MEMBER RECORD NAME
CUSTID	CUSTOMER	MAY_PLACE	CUSTOMER_ORDER

6. CS-IS Report - Mapping Rules for an Entity
Input: Entity Name - ATTRIBUTE_CLASS

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Mapping Rules for Entities

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ENTITY NAME	DISTRIBUTED UPDATE RULE	DISTRIBUTED RETRIEVAL RULE
-----	-----	-----
ATTRIBUTE_CLASS	DISALLOW	DISALLOW

7. CS-ES Report - External Schema Mappings for a Conceptual Schema Entity
Input: Entity Name - ATTRIBUTE_CLASS

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CS-ES Mappings for Entities

ENTITY NAME	ATTRIBUTE NAME	VIEW NAME	DATA ITEM NAME
ATTRIBUTE_CLASS	DOMAIN_NO AC_NO MODEL_NO	ATTRIBUTE_CLASS	DOMAIN_NO AC_NO MODEL_NO

7. CS-ES Report - External Schema Mappings for an External Schema View
Input: View Name - ATTRIBUTE_CLASS

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CS-ES Mappings for Views

VIEW NAME	DATA ITEM NAME	ENTITY NAME	ATTRIBUTE NAME
ATTRIBUTE_CLASS	AC_NO MODEL_NO DOMAIN_NO	ATTRIBUTE_CLASS	AC_NO MODEL_NO DOMAIN_NO

8. Logical Unit of Work Report -
Input: LUW Name - TEST

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Logical Unit of Work Report

LUW NAME	MOD_ID	DATA BASE
TEST	TEST1	CDM
	TEST7	CDM

9. Keyword Usage Report:

Input: Keyword Name - CDM

Keyword Usage Report: Entity

MODEL NAME	ENTITY NAME	KEYWORD
INTEGRATED_MODEL	AC_KEYWORD	CDM-1
	ATTRIBUTE_CLASS	CDM-1
	ATTRIBUTE_NAME	CDM-1
	ATTRIBUTE_USE_CL	CDM-1
	AUC_CONSTRAINT	CDM-1
	AUC_IS_MAPPING	CDM-1
	AUC_PARM	CDM-1
	AUC_ST_MAPPING	CDM-1
	CDMP_GENERATED_MOD	CDM-1
	COMPLETE_RELATION	CDM-1
	COMPONENT_DATA_FIELD	CDM-1
	CONSTRAINT_INPUT	CDM-1
	CONST_PARM	CDM-1
	DATA_BASE	CDM-1
	DATA_BASE_AREA	CDM-1
	DATA_FIELD	CDM-1
	DATA_FIELD_FILLER	CDM-1

Keyword Usage Report: ATTRIBUTE

MODEL NAME	ATTRIBUTE NAME	KEYWORD
INTEGRATED_MODEL	AC_NAME	CDM-1
	AC_NAME_TYPE	CDM-1
	AC_NO	CDM-1
	AREA_ID	CDM-1
	AUC_ALG_USE_CODE	CDM-1
	AUC_MOD_INSTANCE	CDM-1
	AUC_VALUE	CDM-1
	BEGIN_VALUE	CDM-1
	CASE_NO	CDM-1
	CDM_KEYWORD	CDM-1
	CHARACTER_NULL	CDM-1
	COMPARISON_OP	CDM-1
	CONSTANT_VALUE	CDM-1
	CONSTRAINT_NO	CDM-1
	CONST_ALG_USE_CODE	CDM-1
	CONST_MOD_INSTANCE	CDM-1
	CREATION_DATE	CDM-1

MODEL NAME	RELATION	KEYWORD
INTEGRATED_MODEL	USER_VIEW_CONTAINS_DATA_ITEM	CDM-1

9. Keyword Usage Report:
Input: None

Keyword Usage Report: Entity

MODEL NAME	ENTITY NAME	KEYWORD
INTEGRATED_MODEL	AC_KEYWORD	CDM-1
	ATTRIBUTE_CLASS	CDM-1
	ATTRIBUTE_NAME	CDM-1
	ATTRIBUTE_USE_CL	CDM-1
	AUC_CONSTRAINT	CDM-1
	AUC_IS_MAPPING	CDM-1
	AUC_PARM	CDM-1
	AUC_ST_MAPPING	CDM-1
	CDMP_GENERATED_MOD	CDM-1
	COMPLETE_RELATION	CDM-1
	COMPONENT_DATA_FIELD	CDM-1
	CONSTRAINT_INPUT	CDM-1
	CONST_PARM	CDM-1
	DATA_BASE	CDM-1
	DATA_BASE_AREA	CDM-1
	DATA_FIELD	CDM-1
	DATA_FIELD_FILLER	CDM-1

Keyword Usage Report: ATTRIBUTE

MODEL NAME	ATTRIBUTE NAME	KEYWORD
INTEGRATED_MODEL	AC_NAME	CDM-1
	AC_NAME_TYPE	CDM-1
	AC_NO	CDM-1
	AREA_ID	CDM-1
	AUC_ALG_USE_CODE	CDM-1
	AUC_MOD_INSTANCE	CDM-1
	AUC_VALUE	CDM-1
	BEGIN_VALUE	CDM-1
	CASE_NO	CDM-1
	CDM_KEYWORD	CDM-1
	CHARACTER_NULL	CDM-1
	COMPARISON_OP	CDM-1
	CONSTANT_VALUE	CDM-1
	CONSTRAINT_NO	CDM-1
	CONST_ALG_USE_CODE	CDM-1
	CONST_MOD_INSTANCE	CDM-1
	CREATION_DATE	CDM-1

MODEL NAME	RELATION	KEYWORD
INTEGRATED_MODEL	USER_VIEW_CONTAINS_DATA_ITEM	CDM-1

9. Keyword Usage Report:
Input: Model Name ~ INTEGRATED_MODEL

Keyword Usage Report: Entity

MODEL NAME	ENTITY NAME	KEYWORD
INTEGRATED_MODEL	AC_KEYWORD	CDM-1
	ATTRIBUTE_CLASS	CDM-1
	ATTRIBUTE_NAME	CDM-1
	ATTRIBUTE_USE_CL	CDM-1
	AUC_CONSTRAINT	CDM-1
	AUC_IS_MAPPING	CDM-1
	AUC_PARM	CDM-1
	AUC_ST_MAPPING	CDM-1
	CDMP_GENERATED_MOD	CDM-1
	COMPLETE_RELATION	CDM-1
	COMPONENT_DATA_FIELD	CDM-1
	CONSTRAINT_INPUT	CDM-1
	CONST_PARM	CDM-1
	DATA_BASE	CDM-1
	DATA_BASE_AREA	CDM-1
	DATA_FIELD	CDM-1
	DATA_FIELD_FILLER	CDM-1

Keyword Usage Report: ATTRIBUTE

MODEL NAME	ATTRIBUTE NAME	KEYWORD
INTEGRATED_MODEL	AC_NAME	CDM-1
	AC_NAME_TYPE	CDM-1
	AC_NO	CDM-1
	AREA_ID	CDM-1
	AUC_ALG_USE_CODE	CDM-1
	AUC_MOD_INSTANCE	CDM-1
	AUC_VALUE	CDM-1
	BEGIN_VALUE	CDM-1
	CASE_NO	CDM-1
	CDM_KEYWORD	CDM-1
	CHARACTER_NULL	CDM-1
	COMPARISON_OP	CDM-1
	CONSTANT_VALUE	CDM-1
	CONSTRAINT_NO	CDM-1
	CONST_ALG_USE_CODE	CDM-1
	CONST_MOD_INSTANCE	CDM-1
	CREATION_DATE	CDM-1

MODEL NAME	RELATION	KEYWORD
INTEGRATED_MODEL	USER_VIEW_CONTAINS_DATA_ITEM	CDM-1

9. Keyword Usage Report:

Input: Model Name - INTEGRATED_MODEL

Keyword Usage Report: Entity

MODEL NAME	ENTITY NAME	KEYWORD
INTEGRATED_MODEL	AC_KEYWORD	CDM-1
	ATTRIBUTE_CLASS	CDM-1
	ATTRIBUTE_NAME	CDM-1
	ATTRIBUTE_USE_CL	CDM-1
	AUC_CONSTRAINT	CDM-1
	AUC_IS_MAPPING	CDM-1
	AUC_PARM	CDM-1
	AUC_ST_MAPPING	CDM-1
	CDMP_GENERATED_MOD	CDM-1
	COMPLETE_RELATION	CDM-1
	COMPONENT_DATA_FIELD	CDM-1
	CONSTRAINT_INPUT	CDM-1
	CONST_PARM	CDM-1
	DATA_BASE	CDM-1
	DATA_BASE_AREA	CDM-1
	DATA_FIELD	CDM-1
	DATA_FIELD_FILLER	CDM-1

9. Keyword Usage Report:
Input: Model Name - INTEGRATED_MODEL

Keyword Usage Report: ATTRIBUTE

MODEL NAME	ATTRIBUTE NAME	KEYWORD
INTEGRATED_MODEL	AC_NAME	CDM-1
	AC_NAME_TYPE	CDM-1
	AC_NO	CDM-1
	AREA_ID	CDM-1
	AUC_ALG_USE_CODE	CDM-1
	AUC_MOD_INSTANCE	CDM-1
	AUC_VALUE	CDM-1
	BEGIN_VALUE	CDM-1
	CASE_NO	CDM-1
	CDM_KEYWORD	CDM-1
	CHARACTER_NULL	CDM-1
	COMPARISON_OP	CDM-1
	CONSTANT_VALUE	CDM-1
	CONSTRAINT_NO	CDM-1
	CONST_ALG_USE_CODE	CDM-1
	CONST_MOD_INSTANCE	CDM-1
	CREATION_DATE	CDM-1

9. Keyword Usage Report:
Input: Model Name - INTEGRATED_MODEL

Keyword Usage Report: Entity

MODEL NAME	RELATION	KEYWORD
INTEGRATED_MODEL	USER_VIEW_CONTAINS_DATA_ITEM	CDM-1

2.4 How to Run Reports

1. Enter the following at the system prompt:

\$REPORTS

2. At the REPORTS prompt, enter the ORACLE® username/ password. The REPORTS menu then appears on the screen.

An example CDM Reports menu screen follows.

*** CDM REPORTS ***

- 1) Conceptual Schema Report
- 2) External Schema Report
- 3) Internal Schema Report
- 4) Domain Report
- 5) Conceptual Schema Key Report
- 6) CS-IS Report
- 7) CS-ES Report
- 8) Logical Unit of Work Report
- 9) Keyword Usage Report
- 10) Change username/password for session
- q) quit

Enter Your Option>:

3. You then are prompted to take one of three actions:
 - a. Select one of eight Reports
 - b. Change the username/password for the session
 - c. Quit the Reports session
4. If a report is chosen, you are then prompted to select the output destination for the report; the output can be viewed on the screen (the default) or it can be directed to a file named by you at this time.
5. You are then prompted for input according to the report chosen.
6. To end the session, you enter a 'Q' in the REPORTS menu and the system prompt is displayed.